

CONTACT: Craig V. Kettleson, AICP, Business Development Manager

WBIC-Madison Office

2820 Walton Commons West, Suite 100

Madison, WI 53718

Phone: 608-222-8084

Fax: 608-224-1452

Problem Statement

Rural communities in the state of Wisconsin, including the ten counties in northwest Wisconsin, have not recently enjoyed the same degree of economic success as the state's urban areas. This lack of success has primarily resulted from the difficulties rural areas have attracting the service and technology-based businesses that have driven the state's recent economic growth. Instead, rural areas have been plagued by persistently high unemployment rates, resulting primarily from declines in the agriculture, paper/forestry, and mining industries that dominate the rural economy. In agriculture alone, the effects of depressed dairy prices resulted in the loss of an estimated 4,509 jobs per year between 1991 and 1996. Based upon these economic conditions, young Wisconsin residents find it difficult to obtain management jobs or jobs requiring higher skills and offering higher pay in rural areas. In addition, income and wages in these areas lag 20 to 40 percent below those in urban areas. Due to limited business opportunities, and the limited potential for business growth, managers and highly skilled workers have migrated out of rural areas. Exasperating the problem has been the limited availability of wealth and savings to invest in new business ventures, and the decline in the general availability of business capital to start and expand businesses.

Although many of Wisconsin's rural lenders would deny "being conservative," the lack of capital is most likely the result of the lack of sound investment opportunities and the acquisition of local lending institutions by large holding companies who exercise restrictive lending practices, particularly with respect to start-up businesses in rural areas. Technology-based companies have also tended to locate and remain in metro areas of the state due to the availability and consolidation of resources they require during the formation and pilot stages of growth. Difficulties countering this trend have been experienced in rural areas because necessary resources are often either fragmented or non-existent. The Wisconsin Rural Technology Based Economic Development Initiative (Technology Initiative) was designed by the Northwest Regional Planning Commission (NWRPC) to counter these adverse trends and promote sustainable economic development in rural northwest Wisconsin.

Program Goal

Build a stronger rural economy through the promotion of a Comprehensive Economic Development Strategy (CEDS) that attempts to start-up and grow new technology-based businesses in rural areas of the state. These businesses tend to produce higher paying jobs, which stand to have a larger impact on the economic base of the benefiting community.

Program Summary

The Technology Initiative was developed in 1996, following a series of meetings by the management team of the NWRPC that sought to evaluate the impact of existing economic development programming on communities located in the northwest portion of the state. The conclusion reached by the team was that, in spite of the numerous projects being driven through existing programs, the region was experiencing very little net gain in high quality jobs, tax base, and/or per capita income. Instead, the economies of the region were either continuing to lose businesses and jobs on a net basis, and/or were continuing to be dominated by resource-based businesses, which employ lower skilled persons at rates of pay below the statewide average. Based on these conclusions, the team decided that if the region was going to reverse this trend, a different strategy was required that would seek to attract technology-based businesses and their higher-skilled, higher-paying jobs to the region.

In deciding how to attack the problem of attracting technology-based businesses to rural areas, the team began to research strategies being implemented by other economic development organizations across the country. Assistance was provided during this process by the staff from the Economic Development Administration (EDA) and the National Business Incubation Association (NBIA). The research identified two relatively effective strategies employed by organizations in Pennsylvania and Missouri that were focused on recruiting high-technology firms to business incubator networks. The NWRPC staff conducted numerous interviews with the directors and staff from both of these projects, and worked very closely with Mr. Robert Meeder, SPEDD, Inc., and Mr. Robert Sherwood, Center for Business Innovation, Inc., to understand what made each of these strategies successful. What is now called the Technology Initiative was developed using pieces of these strategies enhanced through the lessons learned while implementing a small-scale version of the Initiative over the last two years. The NWRPC created the WBIC as a non-stock, nonprofit subsidiary in 1996 to implement the Initiative, and other programs focused on promoting innovation and technology transfer in the northwest region. The Initiative has been part of the Commission's CEDS since its inception in 1996. The role of the WBIC was later expanded to promote rural economic development on a statewide basis with the opening of a Madison office in 1998. Funding for the Initiative, totaling approximately \$2 million to date, has been provided by the EDA, the U.S. Department of Agriculture-Rural Business-Cooperative Service, the Wisconsin Department of Agriculture, Trade and Consumer Protection, and the

Wisconsin Department of Commerce.

In its current form, the Technology Initiative has two key attributes that the Corporation believes makes it successful, namely: (1) it offers top-to-bottom service to each client business (including research and development, financing, real estate, and marketing assistance); and (2) it offers to make a critical investment in each client business at an early enough stage of development that the WBIC can effectively exert influence on the company's location decision. Experience indicates that this can often be accomplished for very little dollars if it occurs prior to the completion of the business' research and development efforts. As part of this strategy, the Corporation will attempt to attract each business to a rural location by offering to assist with the financing of the research and development, and the development of a commercialization strategy. Then a formal business plan will be completed for the business, and space may be offered in one of the six Enterprise Centers managed by the Corporation in various rural communities throughout the state. Finally the WBIC will work to develop a financial package that will allow the business to capitalize the new product or service based upon the strategy outlined in the business plan. A typical incentive package that will be provided to a business in order to complete the above-mentioned activities, and influence its location decision, is identified in Table 1 below.

Table 1	
Typical Small Technology Based Business Incentive Package	
Funding Source	Average Dollar Amount (\$)
Equity	\$25,000
Technology Seed Fund	\$15,000
Rural Economic Development Loan	\$10,000
Micro Loan	\$25,000
Private Financial Institution	\$100,000
TOTAL	\$175,000

Source: Wisconsin Business Innovation Corporation.

The derivation and purpose of each of these investments is described below.

- Equity: Equity includes funds derived from the entrepreneur, angel investors,

potential clients, and/or the WBIC's Community Based Venture Fund, which are used to generate a cash position in the business venture and leverage future lending resources. Often these funds will be offered in return for rights under a licensing agreement and/or an option to acquire stock in the company.

- **Technology Seed Fund:** Short term lending from the WBIC's Technology Seed Fund is designed to be repaid with the final commercialization loan package. These funds will typically be offered at zero or low interest, with a deferral on the payment of principal and interest for a period of 18 to 24 months. The funds can be used to complete research and development activities and validate the technology, develop prototypes, and file patents and copyrights.
- **Rural Economic Development Loan:** Second-stage short-term lending from the Technology Seed Fund also designed to be repaid with the final commercialization loan package, and offered at the same terms and conditions (i.e., interest and deferrals) as first stage lending. The funds can be used to pay for the soft costs of business development including the costs of creating or updating the business plan, developing a market strategy, developing a commercialization strategy, and developing a financing strategy.
- **Micro Loan:** Longer-term lending from the WBIC's Micro Loan Fund that will be offered at low-interest rates with a deferral on the payment of principal and interest for up to 12 months. These funds can be used to purchase samples, inventory, and equipment.
- **Private Financial Institution:** Longer-term lending from a private financial institution for use in purchasing inventory, samples and equipment, and leveraged by the equity dollars and public financing provided to the business venture.

Following this initial investment, and assuming that the business concept is still viable, the WBIC will work with the business to secure the final commercialization package. These funds will allow the business to commence operations and ramp-up production in accordance with the business plan. Funding at this stage of the project will be provided by the WBIC's Intermediary Relending Program and/or other agribusiness revolving loan funds, federal and state loan programs, private investor networks, local and regional loan funds, and private lenders.

As part of the Initiative, the WBIC is currently working with 27 technology-based businesses on starting or expanding their operations in rural Wisconsin. Services being offered to these businesses, which are typically provided in combination to insure the success of the strategy, include the following:

- **Technical Assistance***Access to Electronic Knowledge Services:* The WBIC uses the electronic knowledge services offered by Teltech and Knowledge Express to search for answers to technical, market, and business related questions posed by client businesses. These services can be particularly useful when attempting to search for patents, locate technical reports, identify technical experts in a field of study, locate vendors of specialized parts and

equipment, and identify technologies available for licensing.

- *Technical and Market Assessments, and Commercialization Strategies:* The WBIC works with client businesses to identify and evaluate the technical and market feasibility of new technologies and product innovations. The WBIC will also provide assistance with the development of the market research, distribution strategies, business plans, and financial projections necessary to successfully commercialize these products and technologies.
- *Access to Federal Laboratories and Universities:* The WBIC is designated as a lead contact in Wisconsin for technology transfer from USDA laboratories, and has cooperative relationships with universities, which enable companies to access technical experts and undertake joint cooperative research and development projects.
- *Access to International Technology Transfer and Marketing:* The Corporation's affiliations with International Technology Centers and business development organizations are helpful in assessing markets, and/or identifying opportunities for business alliances and trade in Europe. These relationships can also be used to assist in packaging financing for international development.
- *Access to Capital.* As described earlier, the WBIC assists client businesses in accessing various sources of capital available to entrepreneurs for product development and commercialization.
- *Access to Real Estate and Shared Business Services through a Network of Rural Enterprise Centers.* The WBIC currently maintains a network of six Enterprise Centers that offer affordable, flexible manufacturing lease space, and shared business services to start-up and small growing firms. The six Centers are located in the northern Wisconsin communities of Grantsburg, Spooner, Ladysmith, Superior, Siren, and Medford, and represent a combined 191,500 square feet of space. Each Center within the network will typically offer the following shared business services to tenants and/or affiliate businesses (i.e., businesses which are not located in a facility, but can still access the services): reception and telephone answering services; faxing and telecommunication services; seminar and conference rooms, complete with presentation tools; information databases; photocopying and printing bindery services; employee insurance benefits; janitorial, maintenance and security services; and word processing and desktop publishing services.
- In the future, the WBIC would also like to provide its client businesses with access to an experience-based learning factory, which will teach employees the basics of precision machining, metal fabrication, and high-value woodworking in a hands-on environment in coordination with classes at the local technical college.
- As an additional feature of the Initiative, the WBIC attempts to identify, both domestically and internationally, the most promising new technologies to internally develop and commercialize through knowledge based searches of patent and licensing information, and partner referrals. Once the technology has been identified, the Corporation will attempt to promote its maturation and commercialization by:

- Leveraging the research and development activities of universities, Federal research laboratories, and/or private sector businesses.
 - Creating an inventor network, which will partner individuals who have developed a proprietary technology, with key researchers or experts in a particular field as well as targeted financial networks.
 - Establishing an Agribusiness Commercialization Center that will be used to test and develop new agricultural-based products and technologies.
 - Forming partnerships and/or engaging in collaborative efforts with private interest groups and businesses, Federal and state agencies, and domestic and international economic development groups, in an effort to add value to businesses and develop successful joint ventures.
 - Encouraging the formation of networks that will allow small and medium sized companies to team with each other, or link with larger companies, to successfully compete on larger scale domestic or international projects.
- The WBIC is currently working on internally developing and commercializing products from six new technologies including: bio-oils and bio-fuels; bio-plastics; environmental technologies; engineered wood products; low cholesterol dairy products; and e-commerce technologies. A brief summary of each of these products is provided below:
 - Bio-oils and Bio-fuels: The WBIC is currently working with three German companies (WLZ Raiffeisen AG, Stuttgart; TESSOL, GmbH, Stuttgart; and IGB Monforts, Mönchengladbach) on commercializing a technology in the United States that uses primarily canola and sunflower oil, using a cold press extraction process, to produce biodegradable oils and fuels. TESSOL, GmbH, a subsidiary of WLZ Raiffeisen AG (the largest farm cooperative in southern Germany) developed the additive package used to create these products. The presses used to crush the seeds are manufactured by IGB Monforts. The development team is also exploring the possibility of using soybeans to generate the base vegetable oil used in the manufacturing process. Possible new product applications from the technology include: biodegradable chain oil lubricants, forming oils, block train oils, machine saw oils, two-stroke motor oils, penetrating oil with a WD40 type aerosol application, and bio-diesel fuel.
 - Bio-plastics: The WBIC is currently working with Produktentwicklung, Freiburg, Germany, as well as a Swedish and a Wisconsin company, on commercializing a new technology that uses plant materials to develop a biodegradable plastic composite that can be molded using the traditional extrusion process or injection molding techniques into various products for the marketplace. Possible new product applications include biodegradable bags, containers, plant pots, plant plugs, and nursery containers.
 - Engineered Wood Products: The WBIC is working with two Wisconsin companies and two European companies, located in Germany and Poland, on

commercializing a technology that uses wood veneer combined with a recycled paper honeycomb to manufacture boards that have the same general appearance and performance characteristics as wood. The main advantages of these boards are that they are typically lighter, stronger, and less costly to produce than either plywood or particle-board. The wood can be used as a construction material for either interior or exterior products including: furniture, wall panels, high end ceiling tiles, and log siding for homes and commercial buildings.

- E-commerce Technologies: The WBIC is working with Produktentwicklung and KSR Net Technics, GmbH, a software consultant located in Freiburg, Germany, to develop a proprietary software system that allows businesses sharing a common idea and interest to market their products in an electronic warehouse format on the Internet. The home page for each warehouse will be aimed at a particular buying group, allowing like businesses to engage in relationship marketing. The software will also come equipped with a new form of secure electronic transfer that will provide shoppers with a safer means of making payments over the Internet. The WBIC is also attempting to form a partnership with CANUSA, Thunder Bay, Canada, to develop a proprietary software system that uses a network of kiosks, CD-ROM, the Internet, and Web TV to distribute travel information to tourists.
- Low Cholesterol Dairy Products: As part of the bio-oils project, a development team made up of researchers from the University of Wisconsin-Madison, Department of Dairy Science, and the University of Hohenheim, Stuttgart, are examining the benefits of using the by-product or meal generated from the crushing of canola seed as a forage product for dairy cows. Preliminary research indicates that the milk produced by these cows has a low cholesterol content. The WBIC and its partners are attempting to determine if this milk can be used to make low cholesterol dairy products, which are of the same quality and taste as traditional dairy products.
- The WBIC is of the opinion that the smaller scale version of the Initiative has been a success over the last two years on a regional level and a larger scale version, started in 1998, will produce larger positive impacts in rural communities on at statewide basis. These impacts include the following:
 - Replace the low technology, resource based jobs lost by primarily the agriculture industry between 1991 and 1996 with high technology jobs.
 - Successfully promote high technology development in a hard to serve target area, namely rural areas, versus in growth corridors and/or urban growth areas.
 - Stimulate rural economies through spin-offs and other forms of technology transfer.
 - Assist rural businesses with their ability to access markets which they have traditionally had difficulty penetrating through e-commerce and export marketing assistance.
 - Provide labor training to enhance the skill levels of the

workforce in rural areas.

- Promote the development and commercialization of environmentally friendly products and services.
- Promote sustainable development in rural areas.
- Provide incentives for young people to either remain in or return to rural areas.

Lessons Learned

- Through the Technology Initiative, the WBIC has been able to offer a unique array of technical, financial, and business support services critical to small business success. Based upon our experiences to date, the management and staff of the WBIC feels that the following five factors are critical to the successful development and implementation of the Initiative:
 - Developing a mutual understanding among all decision makers and project managers that the strategy will work, in spite of the perceptions and written opinions of experts in economic development stating that rural areas cannot successfully compete for technology based business development.
 - Understanding that there is a high amount of quality deal flow which occurs in the international marketplace and realizing that, in spite of some obstacles, global teams can have a competitive edge in developing and marketing innovative products and technologies.
 - Understanding that in order for the strategy to be successful, an organization needs to assemble the full package of services for client businesses. Further, this assemblage of services will take a major commitment of time and effort on the part of the organization, particularly considering that, based upon conventional wisdom, stakeholders may not believe that the strategy can be successful.
 - Understanding that the strategy is not for every organization, in that it requires a high quality, well paid, staff with the ability to add value to technology based companies, and the ability of the base organization to accept some risk.
 - Understanding that this is an aggressive strategy that requires a large commitment of resources at a very early stage of the business' development, but the potential upside of a successful project is huge for rural communities.

